

## Gear Rack Grinding

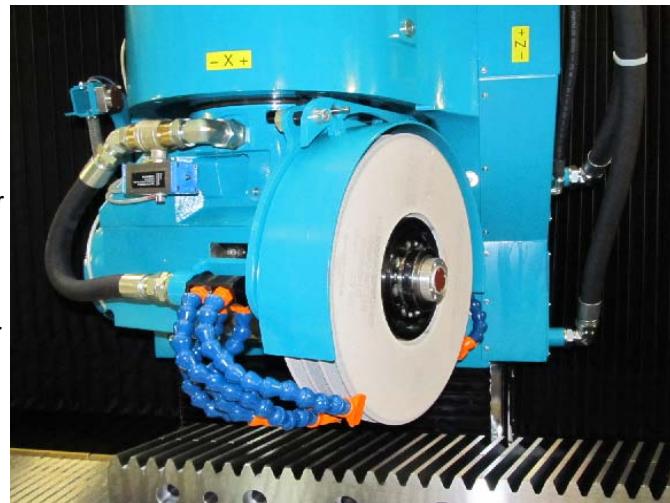
A40-700

Gear racks are used for number of applications where rotational motion is translated to linear or vice versa and moves machinery parts.

Ground racks are specially used in precise machinery.

The racks are placed on magnetic table and grouped together inside the machine. Using a big wide wheel with up to 450mm diameter, it is possible to profile and grind several teeth on rack in one shot. Generation of tooth profile and profile on wheel is all handled on the machine without additional hard or software. Both profile and/ or flat can be ground on C500 machines.

A number of pre- and postgrinding probing options enable to inspect the rack without taking it out of machine.



### 1. Cycletime for Production

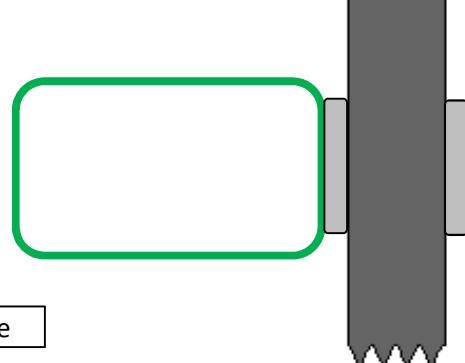
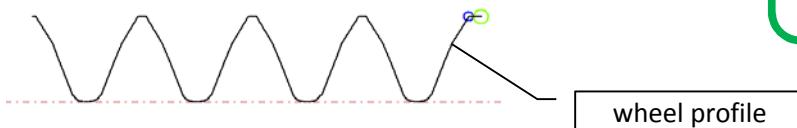
Workpiece:						
2 piece Helicald Gear Racks, Module 8, 19.532deg angle, L=960mm, 36 teeth						
Material C45						
Operations	Probe	Dress	Roughing	Dress	Finishing	Probe
Feed [mm/Min]	2000	80	4000	200	2000	1000
Power [kW]		3	25	3	10	
Cutting feed [m/s]		32	32	32	32	
Comment	probe gap					probe div
Cycle time [min]	1	5	12	2	10	3
Total cycle time	33min (Grinding time for one rack 16 min 30 sec)					

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

The indicated times are calculated for 0.2mm removal stock and  
**2 racks** in line like shown in picture above

### 2. Used Grinding Wheels

1 D450x90 DXF Corundum wheel



### 3. Machine and Software Requirements

Machines: 5 axes CNC grinder : Corvus C500

Control: Fanuc 31i

Accessories:

Responsible engineer: SIW 03.2013

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